Long-term follow-up in Transient Epileptic Amnesia: Prognosis over 10-20 years

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Background

- Transient Epileptic Amnesia (TEA) is a form of adult onset temporal lobe epilepsy characterised by brief, recurring amnestic seizures[1].
- Between these episodes, memory deficits also commonly occur[2].
- Short-term follow-up after commencing anticonvulsant medication suggests good seizure control and stable cognition[3-4].
- Recent case reports, however, have raised concerns that TEA may be a prodrome of Alzheimer's Disease (AD).[5-6]

Aims

i. Investigate clinical & cognitive outcome of patients with TEA over 10-20 years;

ii. Assess evidence of increased risk of AD.

Methods

2 cohorts of patients with TEA were studied:

C1: 10 patients[1]; follow-up at 10 & 20 yrs;

C2: 42 patients[2]; follow-up at 10 yrs only.

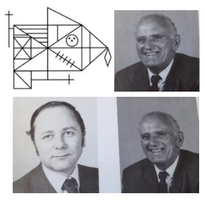
Procedure

- *Clinical outcomes*:, AD diagnosis, mortality, seizure history gained via clinical interview and/or GP records
- *Cognitive outcomes:* comprehensive cognitive testing completed in the following subset:

Demographics	TEA-BL (n=50)	TEA-10yr (n=19)	TEA-20yr (n=3)
Mean age (SD)	66 (9)	75 (8)	83 (5)
Sex (M : F)	34 : 16	15 : 4	2 : 1
TEA history			
Mean age at onset (SD)	62 (9)	62 (8)	55 (5)
Median no. of amnestic attacks at baseline (IQR)	10 (6 - 30)	15 (6 – 27)	50 (28 – 55)
Proportion of +ve EEG	36%	32%	33%

Measures

- *General cognitive ability*: NART[7] or WASI[8]
- *Objective memory assessment:*
  - Logical Memory story 1 (LM 1&2)[9]
  - Rey Complex Figure (RCFT- 30')[10]
  - Recognition Memory Test (RMT) – Words (W) & Faces (F)[11]



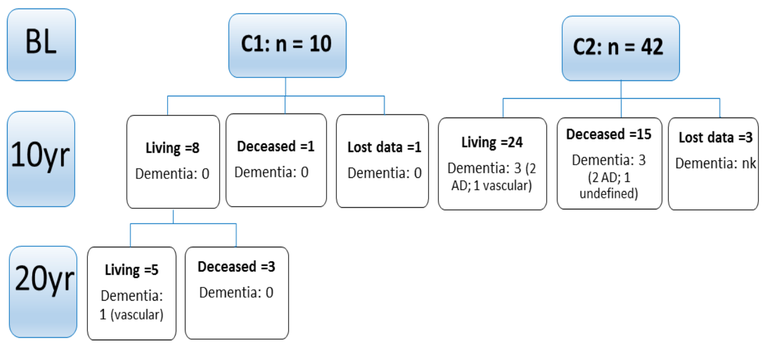
- *Additional tests* (C2): Naming (GNT)[12] ,verbal fluency (FAS, Animals)[13], problem solving (WCST)[14]
- TEA-BL was compared with 24 healthy age- & IQ-matched controls (HCs); TEA-10yr & TEA-20yr were compared with 12 healthy IQ-matched controls (74yrs).

Analysis

- *Clinical outcome*: mortality and prevalence of AD were compared with published prevalence rates.[15-16]
- *Cognitive ability*: TEA cognitive data were compared with HC data using z-scores or modified *t*[17].
- *Cognitive change*: paired t-tests compared each TEA individual's baseline (BL) with 10yr performance and 10yr with 20yr performance (using p <.05).

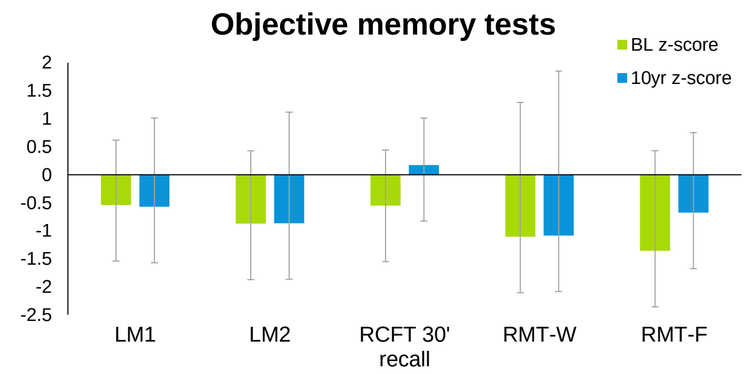
Results: Clinical outcome

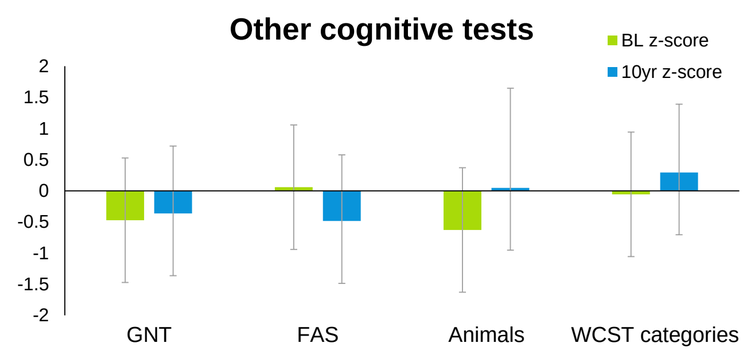
- **Dementia**: no cases of AD in C1 after 20 yrs (1 case of vascular dementia); 4 cases of AD in C2 after 10 yrs (+2 other cases of dementia).
- **Life expectancy:** did not appear reduced.
- **Seizures:** generally well controlled.



Results: Cognition – 10 yrs

- General cognitive ability was above average and did not decline (BL: M = 117, SD = 12; 10yr: M = 121, SD = 11).
- Compared with matched peers, the TEA group was not significantly reduced on any measure at 10yrs.





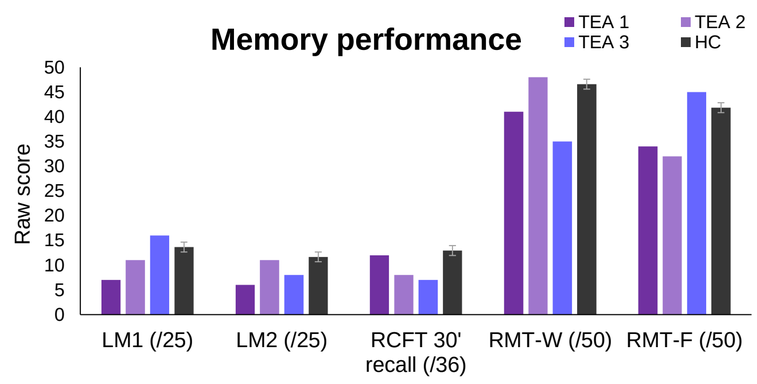
- At an individual level, impaired performances (i.e. 2 SDs below the HC mean) were found in up to 26% of the TEA sample, for any one test.
- Significant change over time from BL to 10yrs for individual patients was shown on story recall, recognition memory, verbal fluency and problem-solving.
- Despite this, ~ a third of patients remained stable or improved on their scores.

Test	% cases impaired (>2 SDs below HC)	% cases no decline (10yr > BL)	Group level* (significant decline *p)*
LM1	21	37	.048
LM2	26	48	.038
RCFT 30' recall	0	31	n.s
RMT-W	26	37	.039
RMT-F	16	11	<.001
GNT	5	33	n.s
FAS	11	18	.023
Animals	17	17	.007
WCST categories	0	33	.043

* *paired t-test comparing scores at 10yrs vs BL for each patient. All significant differences are in the direction of decline. n.s = non-significant*

Results: Cognition – 20 yrs

- General cognitive ability remained above average (M = 118, SD = 10), with no decline.
- Compared with HCs (M = 74yrs), performance on cognitive tasks was not significantly reduced, with the exception of one memory measure per participant (TEA1: LM2; TEA2: RMT-F; TEA3: RMT-W).



- Significant declines in individuals' scores (comparing 10 to 20yrs) were only observed for delayed story recall and letter fluency, but were not seen in all participants.

Discussion

- Memory difficulties persist in TEA, even with successful cessation of seizures.
- For some people, these difficulties remain stable over 10-20 years; in others declines are observed.
- Over time, additional changes in executive function may arise.
- Compared with matched healthy controls, people with TEA performed within age-expectation on the majority of measures.
- Across the two cohorts, prevalence of AD (8.6%) was similar to population prevalence data (9.7%)[16]; with no evidence of reduced life expectancy (> 79 yrs).[15]
- The prognosis of TEA appears relatively benign.

References & Disclosures

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